

IV. REMARKS

In response to the Office Action mailed December 3, 2004, Applicants respectfully request that the Examiner reconsider his rejection of the remaining claims.

Summary of Office Action

Claims 1, 3-9 and 17-26 remain in this application.

Claims 1, 3-9, 17 and 18 are rejected under 35 U.S.C. §112, first paragraph as failing to comply with the written description requirement.

Claims 19-26 are rejected under 35 U.S.C. §112, second paragraph as failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 3-5, 7-9 and 17-25 are rejected under 35 U.S.C. § 103(a), as being unpatentable over *Chen, et al.* (U.S. Patent 5,482,881) in view of *Gardner, et al.* (U.S. Patent No. 5,953,613).

Claims 6 and 26 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Chen* and *Gardner* in further view of *Miyata*. (U.S. Patent 5,183,773).

Claims 22-23 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Chen* and *Gardner*, as applied to claim 19, and further in view of *Shah, et al.* (U.S. Patent No. 5,065,208).

Claims 1, 3, 4, 6-9, 17-19 and 24-26 are rejected under the judicially created doctrine of obvious-type double patenting over claims 1-5 of U.S. Patent No. 6,235,584 in view of *Gardner*.

Summary of Applicants' Response

Applicants have amended claims 1 and 19 to more particularly point out and distinctly claim the subject matter of the invention. The amendment to claims 1 and 19 clarify that the drain implant

is performed in the drain region of a memory device after the source implant. The amendments add no new matter.

Detailed Response

The present invention relates to systems and methods for reducing short channel effects in the design and manufacture of integrated circuit memory devices, specifically in stacked gate memory devices. Applicants limit the degree to which the drain implants diffuse under the stacked gates. Specifically, the method and system comprise providing a plurality of gate stacks above a substrate. Each of the plurality of gate stacks includes a first edge and second edge. The method and system also comprise providing a source implant adjacent to the first edge of each of the plurality of gate stacks and driving the source implant under the first edge of each of the plurality of gate stacks. The method and system further comprise providing a drain implant after the source implant is driven under the first edge. The drain implant is in the substrate adjacent to the second edge of each of the plurality of gate stacks.

Response to Rejections Under 35 U.S.C. §112

With respect to the rejection of claims 1, 3-9, 17 and 18 under 35 U.S.C. §112 first paragraph, Applicants have amended claims 1 and 19 to more particularly point out and distinctly claim the subject matter of the invention. Specifically, Applicants have deleted the word "only" which was deemed superfluous. In claim 19, Applicants more particularly and distinctly claim that the drain implant is performed after the source implant, which results in the source implant extending further under the first edge of the stacked gate than the drain implant extends under the second edge of the stacked gate.

With respect to the rejection of claims 19-26 under 35 U.S.C. 112, second paragraph, Applicants have amended claim 19 to more particularly point and distinctly claim the subject matter

of the invention. Specifically, claim 19 now recites "after the source implant diffuses under the first edge of the stacked gate, performing a drain implant adjacent to a second edge of the stacked gate; and wherein the source implant extends further under the first edge of the stacked gate than the drain implant extends under the second edge of the stacked gate." This amendment should alleviate the Examiner's questions and concerns about the language "limiting the duration and temperature of subsequent heat treatments."

Response to Rejections Under 35 U.S.C. § 103(a)

Applicants also respectfully submit that the Examiner has not met the Examiner's burden of factually supporting the alleged motivation to combine: (i) *Chen* and *Gardner*; (ii) *Chen*, *Gardner*, and *Miyata*; and (iii) *Chen*, *Gardner*, and *Shah*. It is the Examiner's burden to factually support any *prima facie* conclusion of obviousness. The Examiner's duty may not be satisfied by engaging in impermissible hindsight; any conclusion of obviousness must be reached on the basis of facts gleaned from the prior art. The preferred evidence to be offered by the Examiner is an express teaching to modify/combine which is set forth within objectively verifiable sources of prior art. See M.P.E.P. §§ 2141-2144. In this case, the Examiner has not cited to any express teachings within the *Chen*, *Gardner*, *Miyata* and *Shah* patents which support a motivation to combine any of these patents to achieve Applicants' claimed invention. More particularly, Applicants submit that one of ordinary skill in the art would not be motivated to combine the teachings of *Gardner* with *Chen* to achieve Applicants' claimed invention especially since *Gardner* teaches "only implanting a drain region and not the source during source drain implant" (*Gardner*, Col. 2, lines 20-25), whereas Applicants' claimed invention teaches providing a drain implant after driving the source implant.

This same argument applies with regard to the Examiner's attempts to combine any other reference with *Chen* and *Gardner*.

Double Patenting Rejection

Upon allowance of the claims and specification by the Examiner, Applicants will submit an appropriate Terminal Disclaimer and fees.

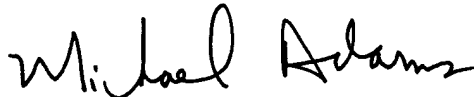
V. CONCLUSION

In light of the arguments presented hereinabove, Applicants respectfully submit that the instant claims distinguish over the cited references, taken either singly or in combination. Accordingly, Applicants respectfully request prompt reconsideration of the claims and a favorable response.

Since no new claims were added, no additional filing fees are due. However, the Commissioner is hereby authorized to charge any fees or credit any overpayment to Deposit Account Number 23-2426 of WINSTEAD SECHREST & MINICK P.C.

If the Examiner has any questions or comments concerning this paper or the present application in general, the Examiner is invited to call the undersigned at (512) 370-2858.

Respectfully submitted,




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CERTIFICATION UNDER 37 C.F.R. § 1.8

I hereby certify that this correspondence (along with any item referred to as being enclosed herewith) is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on March 3, 2005.



Signature